UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project Lewis & Clark Nat. F Date November 1, 1949 Author James C. Evenden

SUBJECT—

TITLE

Forest Insect Detection Survey

Lewis and Clark National Forest

1949

By

Forest Insect Laboratory
Coeur d' Alene, Idaho

INDEX NO.—

U. S. GOVERNMENT PRINTING OFFICE 16—47272-1

S. Central Insects
Lewis & Clark.
1949. RH

27,000
1.60
$132,0000

27,000
4.00
$98,00000

2 PP

3" = 4 miles

Forest Insect Detection Survey

Lewis and Clark National Forest
1949

Forest Insect Laboratory
Coeur d'Alene, Idaho

A bark beetle infestation in the ponderosa pine stands of the White Sulphur Springs and Musselshell Ranger Districts of the Lewis and Clark National Forest was reported to this laboratory in 1947. This area was examined by Mr. Evenden on September 3, 1947, and a mountain pine beetle infestation of sufficient severity to warrant an intensive survey was recorded. This survey, under the direction of Mr. A.L. Gibson was conducted in late October 1947. Data obtained from this survey showed that there were some 5,856 infested ponderosa pine trees on an area of 9,950 acres. Control measures were recommended and $40,000 requested to carry out the project. However, these funds were not made available, and no further attention was given to this situation until October 1949. At that time the Forest Supervisor was requested to have the Rangers report their reaction as to the present status of the infestation in their respective districts. A report from the Musselshell District that there were believed to be more red topped ponderosa pine than during previous years, plans were made for a survey of this area. The White Sulphur Springs District reported that no new red tops had been observed. A survey of a number of areas on the Musselshell was made in October by a crew of three men, under the field supervision of Galen C. Trostle.

Data obtained by Mr. Trostle's crew are shown in the following unit summaries.

Whetstone Unit

This rather small unit covers the area between the East Fork of Whetstone Creek and Cooper Creek. The timber is mostly of Douglas fir with some scattered ponderosa pine, with limber pine on the higher slopes. Although infested trees were reported from this area in 1947, sample strip amounting to 30 acres failed to disclose any 1949 attacks of the mountain pine beetle in ponderosa pine.

Flagstaff Unit

This small unit is just within the forest boundary and lies to the east of Flagstaff Creek. The area is covered with a mixed stand of Douglas

fir - ponderosa pine. Although these two tree species are growing in association with each other, there are some small areas where they occur in pure stands. Although scattered single trees and small patches of red topped trees (1948 attack) were recorded, a 30 acre sample failed to show any new (1949) attacks of the mountain pine beetle. The area east of Flagstaff Creek was rather thoroughly scouted from ridges and other vantage points, and although red tops were recorded no 1949 mountain pine beetle attacks were seen.

Pasture Gulch Unit

Total acres	2,200
Acreage of sample strip	52
Coverage of area	2.3
Number of ponderosa pine trees attacked by M.P.B. 1949	2
Number of 1949 attacks per acre	.038
Total number of 1949 attacks	83

This area is not heavily timbered, although there is considerable scattered pine in the northern portion of the unit. However, for the most part the forest type is a stand of mixed ponderosa pine and Douglas fir. In addition to the sample strip acreage obtained from this unit, an extensive reconnaissance of the area failed to show any additional 1949 attacks of the mountain pine beetle. This area was heavily infested in 1946 and 1947.

Baxter Gulch Unit

Total acres	288
Acres of sample strip	34
Coverage of area	11.8
Number of ponderosa pine trees attacked by M.P.B. 1949	7
Number of 1949 attacks per acre	.20
Total 1949 attacks	57

This unit covers a small area of timber on the south facing slope of the hill to the south of Baxter Gulch. In this area mostly below the forest boundary, there are three large patches of red tops. All infested trees recorded during the survey of this unit were below the forest boundary. In the areas or patches of red tops nearly all trees have been killed. There is also evidence of some 1946 and 1947 loss as dead trees from which the needles have fallen are to be seen scattered throughout the unit.

Spring Creek Unit

Total acres	1,400
Acres of sample strip	46
Coverage of area	3.2
Number of ponderosa pine trees attacked by M.P.B. 1949	1
Number of 1949 attacked trees per acre	.022
Total 1949 attacks	30

This unit comprised an area of timber that extended north from the forest boundary for about 2½ miles along the east side of Spring Creek. Although there was a light infestation of the mountain pine beetle reported from this unit in 1947, the status of the beetle broods were considered as indicating an increase in 1948 attacks. Red tops (1947 and 1948 attacks) are scattered throughout the area giving evidence of the loss at that time. Although the southern end of this unit is almost pure ponderosa pine, only one 1949 attack of the mountain pine beetle was recorded.

Hopley Creek Unit

This unit is a rather large area of timber being just within and to the north of the forest boundary and extending east from Trombone Creek to Dry Gulch. The ponderosa pine is but a fringe of timber along the lower slopes, with open grass to the south, and open grass or Douglas fir and limber pine to the north. Although a 2½ percent survey was made of this entire area, no 1949 infested trees were located, except in an area of 880 acres to the northwest of Muir on the East Fork of Hopley Creek. An additional sample was taken from this area of concentrated infestation, which increased the coverage to 5 percent. This small area covers parts of Sections 26, 27, 28, 33, 34, 35, T. 11 N., R. 13 E. Data obtained from this portion of the Hopley unit are as follows:

Total acres	880
Acres of sample strip	52
Coverage of area	5.6
Number of ponderosa pine trees attacked by M.P.B. 1949	25
Number of 1949 attacks per acre	.48
Total 1949 attacks	422

In this sub-unit the ponderosa pine trees are rather small, mostly below 10" D.B.H. There is a large patch of red tops indicating old (possibly 1948) attacks. The terrain of this unit, which faces to the south is rather rugged. The creek flows through deep cuts with steep rocky sides that are rather impossible to cross. This sub-unit

is the only area where the mountain pine beetle infestation can be considered as being at all serious.

Four Mile Area

This area lies along the east side of the Four Mile Creek drainage extending south from a point about ½ mile north of the forest boundary to the forks of Four Mile and Grasshopper Creeks. There are a few scattered red topped trees widely scattered through this timbered area, but no 1949 attacks were recorded. No sample strips were run in this unit, but the area was rather thoroughly covered by an extensive reconnaissance.

Nevada Creek Unit

This area of timber is about 2 miles wide, and lies along the forest boundary, extending west for about four miles from the Nelson Ranch. Approximately half of this unit is within the forest boundary. Although a sample of 66 acres were obtained from this unit, no 1949 attacked trees were recorded.

Clarks Fork Unit

This unit was scouted by running strip east and west from the road. This rather small unit is some 40 chains north of the forest boundary in Sec. 15, 16., T. 10 N., R. 12 E. It is a narrow strip of timber from 10 - 20 chains in width, which extends east and west across the drainage. Along the west side of the creek a few scattered red tops were observed. On the east side the timber stand is of Douglas fir with a few scattered ponderosa pine. Although primarily a Douglas fir stand, on the west side there are a greater number of ponderosa pine trees growing in association. No 1949 attacks of the mountain pine beetle were recorded.

Southeast Castle Unit

This area is at the head of Green Canyon in the southeast portion of the Castle Mountains. The timber stand is mostly Douglas fir with very little ponderosa pine. In 1947 an infestation of the mountain pine beetle was reported from this unit. No 1949 attacks of the mountain pine beetle were found.

Roberts Creek Area

This unit lies along the forest boundary between Roberts and Mead Creeks in T. 11 N., R. 15 E. There is a fairly pure stand of ponderosa

pine in this basin, but it changes to Douglas fir and limber pine at higher elevations and to the west. No red topped trees were recorded within the National Forest, but a few were observed to the south of the boundary.

Summary and Recommendation

It is quite apparent that the severity of the mountain pine beetle infestation throughout this area has decreased materially from conditions as reported in 1947. In areas where the 1947 survey recorded rather serious situations, only a few or no new 1949 attacks of this beetle in ponderosa pine were recorded.

The only serious situation revealed by this season's survey was an area of concentrated infestation in the Hopley Unit which comprises some 7,500 acres. In this sub-unit of 880 acres there is an infestation of the mountain pine beetle in ponderosa pine which averages .48 of a tree per acre. This infestation could be considered as a potentially dangerous hot spot of infestation, warranting treatment. However, a recommendation for control could be quite properly questioned. This question would arise from the fact there there has been a marked natural decrease in the severity of the infestation in other areas. Although the same decrease can perhaps be expected in this unit there is no assurance that it will occur.

In 1947 this area was listed as having an infestation .64 of a tree per acre on 7,200 acres or a total of 4,600 trees.

Unfortunately the 1947 estimate was based upon a totally inadequate survey which prevents a comparison of these data with the results of the 1949 survey where a more significant data were obtained. From an analysis of the information available, it would seem that there may have been but little if any change in the severity of the infestation within this small area and that control would be entomologically warranted. On the other hand one can assume that there would be no great danger in allowing the infestation to go untreated for another year.

Control measures are recommended for this sub-unit, but in view of all factors discussed, the project should be of a low priority. The cost of treating these trees would be approximately 184 effective man days.

Indian Hill
Gul
R12E
R13E
Antelope
North
West
Bower Canyon
West Fork Regal
ANTELOPE TUNNEL
Twin Pks (TWIN SISTERS)
Buffalo Can
M Fk
Can
MOUNTAINS
Sawmill Can
East
Dry
T.11N.
Mtn
8000
7000
East
West
Bluff Mtn
Six Shooter Spr
Fork
MUIR
Trapper
Creek
Fork
Hopley
Middle
Fork
Spo
Cr
Crooks
Fork
NELSON RANCH
T.10N
Haymaker
Gr
Morrisy
OLD
Morrisy
Fork
Daisy
Dean
Gr
Coulee
Coulee
R12E
R13E.
R14E
CO
CO
Dean
MEAGHER
GEATLAN